VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTH CENTRAL REGIONAL OFFICE

FACT SHEET
FOR PROPOSED PERMITTING ACTION
UNDER 9 VAC 5 Chapter 80 Article 1 (TITLE V-CLEAN AIR ACT)

APPLICANT:

VA-30188 AIRS ID 51-680-0097
Rock-Tenn Company, Mill Division, Inc.
P.O. Box 980
Lynchburg, VA 24505

FACILITY LOCATION:

1801 Concord Turnpike, Lynchburg, VA
UTM Coordinates are ZONE: 17 EASTING: 665.8 km NORTHING: 4140.8 km

FACILITY DESCRIPTION:

Rock-Tenn Company, Mill Division, Inc. is a manufacturer of recycled paperboard covered by Standard Industrial Classification (SIC) Code 2631. The facility has the potential to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year. The facility has a permit to modify and operate dated March 25, 2002.

Rock-Tenn Company, Mill Division, Inc. has one recycled paperboard machine (Paper Machine #2) with pocket ventilators and various associated process equipment; two coal/distillate oil/landfill gas boilers (Boilers #001 and #002) rated at 122 MMBtu/hr, each; and one natural gas/distillate oil/landfill gas boiler (Boiler #003) rated at 100 MMBtu/hr. The March 25, 2002 permit includes the facility's three boilers, two paper machines, and three pocket ventilators. The March 25, 2002 permit places limits on the combustion emissions from coal, distillate oil, natural gas, and landfill gas in order to stay below PSD significant emissions increases of sulfur dioxide (SO_2) and nitrogen oxide (NO_x), and also limits the VOC emissions from the two paper machines.

Paper Machine #1 has officially been removed from service as of August 15, 2002.

COMPLIANCE STATUS

The source was last inspected on April 26, 2001, and was found to be in compliance. The required annual emission statement and compliance certification were submitted by Rock-Tenn Company on March 11, 2002.

EMISSIONS SUMMARY:

PLANTWIDE EMISSIONS SUMMARY [TONS PER YEAR]	
CRITERIA POLLUTANTS	***2001 ACTUAL EMISSIONS***
Nitrogen Oxides (NO_x)	76.50
Sulfur Dioxide (SO_2)	129.49
HAZARDOUS AIR POLLUTANTS (HAP)	***2001 ACTUAL EMISSIONS***
Hydrogen Fluoride	0.52
Hydrogen Chloride	4.17

Particulate Matter Emissions from Boilers (Boilers #001, 002, and 003)

Emission limits for Boilers #001 and #002 were established for PM and PM-10 by the March 25, 2002 permit and are being carried forward in the Title V permit for each boiler. Particulate matter emission limits for Boilers #001 and #002 when firing coal are based on stack testing conducted by the source. The use of dedicated multicylones and electrostatic precipitators (ESP) on both Boilers #001 and #002 are required and enable the source to achieve the specific emission rates of 0.12 lb PM/MMBtu and 0.11 lb PM-10/MMBtu when firing coal. These specific emission rates have been used to generate hourly and annual permit limits and are substantially less than the maximum allowable particulate matter emission rate of 0.24 lb PM/MMBtu allowed by Rule 4-8 (9 VAC 5-40-900). Emission limits for Boilers #001 and #002 when firing distillate oil were established using AP-42 factors. Using AP-42, the specific emission rate for Boilers #001 and #002 when firing distillate oil is about 0.015 lb PM/MMBtu which is less than the maximum allowable 0.24 lb PM/MMBtu given in Rule 4-8 (9 VAC 5-40-900). The March 25, 2002 permit also allows the consumption of LFG in the Boilers (Boilers #001, #002, and #003). This change was found to be exempt from permitting since there was no resultant increase in emissions of any pollutant. The permittee will be required to perform stack tests on both Boiler #001 and Boiler #002 at least once during the life of this permit, but not to exceed once every 5 years, to demonstrate compliance with the PM and PM-10 emission limits.

Emission limits for Boiler #003 were also established in the March 25, 2002 permit and are being carried forward in the Title V permit. Emission limits for Boiler #003 were established using AP-42 factors for firing either natural gas or distillate oil. The specific emission rates for Boiler #003 when firing distillate oil is about 0.015 lb PM/MMBtu and 0.0075 lb PM/MMBtu when firing natural gas which are both less than the maximum allowable 0.24 lb PM/MMBtu given in Rule 4-8 (9 VAC 5-40-900). Boiler #003 may also fire LFG.

Sulfur Dioxide Emissions from Boilers (Boilers #001, 002, and 003)

The three boilers at this facility do not have add-on controls for SO_2 emissions. The maximum hourly SO_2 emissions from each boiler have been calculated using the maximum hourly fuel usage for the respective boiler/fuel, the maximum coal or distillate oil sulfur content (1.2% and 0.5%, respectively), and the SO_2 emission factors from AP-42, Sections 1.1 and 1.3, respectively. These values are incorporated into the March 25, 2002 and Title V permits. The March 25, 2002 and Title V permits limit Boilers #001 and #002 to a short-term limit of 206.04 lbs/hr each when combusting coal, and Boilers #001, #002, and #003 to a short-term limit of 51.70 lbs/hr when combusting distillate oil each. The maximum allowable SO_2 emission rate according to 9 VAC 5-40-930 for Boiler #001 and Boiler #002 is 322.08 lb/hr each. The maximum allowable SO_2 emission rate according to 9 VAC 5-40-930 for Boiler #003 is 264 lb/hr. Therefore, the source will automatically be in compliance with 9 VAC 5-40-930 when complying with the provisions of the March 25, 2002 permit and the Title V permit.

An annual SO_2 limit of 821.1 tons/yr is specified in the Title V permit. Fuel certifications, records of the annual consumption of fuels, and the emission factor for SO_2 from the combustion of each fuel will be used to calculate the annual SO_2 emissions. Records of fuel consumption and the result of emission calculations are required to be kept for the most recent five year period.

Nitrogen Oxides Emissions from Boilers (Boilers #001, 002, and 003)

The three boilers at this facility do not have add-on controls for NO_x emissions. The maximum hourly NO_x emissions from each have been calculated using the maximum hourly fuel usage for the respective boiler/fuel, and the NO_x emission factors from AP-42, Sections 1.1, 1.3, and 1.4 respectively. The Title V permit limits the short-term NO_x emissions to 99.41 lbs/hr for coal combustion, 17.28 lbs/hr for distillate oil combustion, and 9.80 lbs/hr for natural gas combustion.

An annual NO_x limit of 543.4 tons/yr is specified in the Title V permit. Records of the annual consumption of fuels and the emission factor for NO_x from the combustion of each fuel will be used to calculate the annual NO_x emissions. Records of fuel consumption and the results of emission calculations are required to be kept for the most recent five year period.

VOC Emissions from the Paper Machine (MCH2) and Associated Equipment

The paper machine does not have add-on controls for VOCs. A material balance on the amount of chemical(s) consumed, taking into account the volatile species present in the chemical(s), the percent volatile by weight of the chemical(s), and assuming 100% evaporation of all volatile species, is required to show compliance with the annual limit.

The source will be required to keep records of all operating procedures, maintenance schedules, service records, and malfunctions of equipment, the above noted material balance

calculations to show compliance with the annual VOC limit, and certified product data sheets or approved equivalent for all chemicals used.

Sulfur Dioxide and Nitrogen Oxides Emissions from the Facility

Total annual emission limits for sulfur dioxide and nitrogen oxides from the three boilers, the paper machine, and the pocket ventilators were established in the March 25, 2002 permit and are carried forward into the Title V permit. These limits were established to avoid PSD review by preventing the exceedance of the PSD significance levels for these pollutants. Therefore, on a rolling monthly basis, the following equation must be satisfied for nitrogen oxides:

$$\frac{(EF_{coal-NOx} \times A) + (EF_{\#2-NOx} \times B \div 1000\ gal) + (EF_{NG-NOx} \times C \div 10^6 cf) + (EF_{LFG-NOx} \times D \div 10^6 cf)}{2000\ lb/ton} \leq EL_{NOx}$$

where

$EF_{coal\text{-}NOx}$ = Emission factor for coal, in units of pound of nitrogen oxides per ton of coal burned = 22

A = Annual consumption of coal, in units of tons per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{\#2\text{-}NOx}$ = Emission factor for #2 distillate oil, in units of pound of nitrogen oxides per 1000 gallons of #2 distillate oil burned = 24

B = Annual consumption of #2 distillate oil, in units of gallons per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{NG\text{-}NOx}$ = Emission factor for natural gas, in units of pound of nitrogen oxides per million cubic feet of natural gas burned = 100

C = Annual consumption of natural gas, in units of cubic feet per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{LFG\text{-}NOx}$ = Emission factor for landfill gas, in units of pound of nitrogen oxides per million cubic feet of landfill gas burned = 34

D = Annual consumption of landfill gas, in units of cubic feet per year, calculated monthly as the sum of each consecutive twelve month period

EL_{NOx} = Annual emission limit for nitrogen oxides, given in Condition Number 13 of this permit, in units of tons per year = 543.4

Likewise, the following equation must be met for sulfur dioxide emissions:

$$\frac{(EF_{coal-SOx} \times S_{coal} \times A) + (EF_{\#2-SOx} \times S_{\#2} \times B \div 1000\ gal) + (EF_{NG-SOx} \times C \div 10^6\ cf) + (EF_{LFG-SOx} \times D \div 10^6\ cf)}{2000\ lb/ton} \leq EL_{SOx}$$

where

$EF_{coal\text{-}SOx}$ = Emission factor for coal, in units of pounds of sulfur dioxide per ton of coal burned = 38

S_{coal} = Weighted sulfur content of the coal burned, in percent, calculated monthly for each consecutive twelve month period

A = Annual consumption of coal, in units of tons per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{\#2\text{-}SOx}$ = Emission factor for #2 distillate oil, in units of pound of sulfur dioxide per 1000 gallons of #2 distillate oil burned = 143.6

$S_{\#2}$ = Weighted sulfur content of the #2 distillate oil burned, in percent, calculated monthly for each consecutive twelve month period

B = Annual consumption of #2 distillate oil, in units of gallons per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{NG\text{-}SOx}$ = Emission factor for natural gas, in units of pound of sulfur dioxide per million cubic feet of natural gas burned = 0.6

C = Annual consumption of natural gas, in units of cubic feet per year, calculated monthly as the sum of each consecutive twelve month period

$EF_{LFG\text{-}SOx}$ = Emission factor for landfill gas, in units of pound of sulfur dioxide per million cubic feet of landfill gas burned = 17.1

D = Annual consumption of landfill gas, in units of cubic feet per year, calculated monthly as the sum of each consecutive twelve month period

EL_{SOx} = Annual emission limit for sulfur dioxide, given in Condition Number 13 of this permit, in units of tons per year = 821.1

TITLE V PROGRAM APPLICABILITY BASIS:

This facility has the potential to emit, as stated in the March 25, 2002 permit, 543.4 tons per year of nitrogen oxides and 821.1 tons per year of sulfur dioxide. The facility also has the potential to emit more than 10 tons per year of hydrogen chloride and more than 25 tons per year of hydrogen chloride and hydrogen fluoride combined. Due to this facility's potential to emit over 100 tons per year of a criteria pollutant or 10/25 tons per year of a HAP(s), Rock-Tenn Company, Mill Division, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 9 VAC 5 Chapter 80 Article 1.

APPLICABLE REGULATIONS/EXISTING PERMITS

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan (SIP). The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

Facility

Rock-Tenn Company, Mill Division, Inc. is a PSD major facility. To avoid PSD review for the modification permitted in the March 25, 2002 permit, the source has taken restrictions on their annual potential-to-emit for SO_2 and NO_x. These requirements are carried forth into the Title V permit.

Boilers (Boilers #001, 002, and 003)

40 CFR Part 60 Subpart Db sets forth the New Source Performance Standard (NSPS) for boilers with maximum heat input capacities of greater than 100 MMBtu/hr and less than 250 MMBtu/hr, which were constructed, modified, or reconstructed after June 19, 1984. Although Boilers #001 and #002 each have a maximum heat input capacity of 122 MMBtu/hr, they are not subject to this NSPS, because they were constructed prior to that date, and have not been modified or reconstructed since that date.

40 CFR Part 60 Subpart Dc sets forth the NSPS for boilers with maximum heat input capacities between 10 MMBtu/hr and 100 MMBtu/hr, inclusive, which were constructed, modified, or reconstructed after June 9, 1989. Boiler #003 will be physically changed from a 122 MMBtu/hr coal and distillate oil fired boiler to a 100 MMBtu/hr natural gas and distillate oil fired boiler. Because the change from coal to natural gas does not increase the emissions of sulfur dioxide or particulate matter to the atmosphere, the change was not considered a modification under NSPS Subpart Dc per the NSPS Subpart A definition. Similarly, since firing LFG does not increase the emission rate of sulfur dioxide or particulate matter, the change is not considered a modification under NSPS Subpart A. Thus, Boiler #003 is not subject to this NSPS.

Since the three boilers at Rock-Tenn Company, Mill Division (Boilers #001, #002, and #003) were constructed prior to March 17, 1972, and have not been modified or reconstructed, the three boilers are subject to 9 VAC 5 Chapter 40 Part II, Article 8, Emission Standards for Fuel Burning Equipment (Rule 4-8). However, Rock-Tenn Company, Mill Division, Inc. has voluntarily taken more stringent restrictions (based on stack testing and AP-42) on the emissions of Particulate Matter (PM), PM-10, nitrogen oxides (NO_x), and sulfur dioxide (SO_2) from each boiler in their March 25, 2002 permit. Due to these voluntary restrictions, Boiler #001 and Boiler #002 will automatically be in compliance with the Rule 4-8 limits of 322.1 lb/hr and 0.24 lb/MMBtu for SO_2 and particulate matter respectively when complying with the AP-42 based permit emission limits. Boiler #3 will also automatically be in compliance with the Rule 4-8 limits of 264.0 lb/hr and 0.24 lb/MMBtu for SO_2 and particulate matter respectively when complying with the AP-42 based permit emission limits. Therefore, the emission limits for all boilers, given in the March 25, 2002 permit, are carried forth into the Title V permit.

The March 25, 2002 permit limits the visible emissions from each boiler to 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity. This requirement is based on 9 VAC 5-40-940, and is carried forth into the Title V permit.

The March 25, 2002 permit requires that Boilers #001 and #002 be equipped with multicyclones and electrostatic precipitators that must be used for PM and PM-10 control when the respective boiler is operating. In addition, the permittee will be required to perform stack tests on both Boiler #001 and Boiler #002 at least once during the life of this permit, but not to exceed once every 5 years, to demonstrate compliance with the PM and PM-10 emission limits. The existing permit also requires the source, with respect to the air pollution control equipment, to develop a

maintenance schedule and maintain records of all maintenance and maintain an inventory of spare parts. Furthermore, the source is required to have available written operating procedures for the boilers and the respective air pollution control equipment, and train operators on the proper operation of all equipment. These requirements are carried forth into the Title V permit.

Paper Machine (MCH2) and Associated Equipment

There are no applicable NESHAP, MACT, or NSPS requirements for the paper machine and associated equipment at this facility. Neither the NESHAP ("Cluster Rule") for the pulp and paper industry (40 CFR Part 63 Subpart S) nor the New Source Performance Standard (NSPS) for Kraft Pulp Mills (40 CFR Part 60 Subpart BB) apply to this facility, because Rock-Tenn Company, Mill Division, Inc. is not a chemical or semi-chemical wood-pulping mill.

Paper Machine #2 was originally constructed in 1929. Paper Machine #2 was modified in 2000 per the definition of modification given in 9 VAC 5 Chapter 80, Permits for Stationary Sources under the permit dated March 25, 2002.

The March 25, 2002 permit limits the annual emissions of Volatile Organic Compounds (VOCs) to 26.4 tons/yr. However, since Paper Machine #1 has been removed from service, the annual emission limit is 23.65tons/yr of VOCs.

The March 25, 2002 permit limits the visible emissions from the paper machine to 10 percent opacity. This requirement is based on 9 VAC 5-50-260 (BACT), and is carried forth into the Title V permit.

The March 25, 2002 permit limits the type of fuel for the pocket ventilators on Paper Machine #2 to natural gas. This requirement is carried forth into the Title V permit.

PERIODIC MONITORING

Boilers (Boilers #001, 002, and 003)

Periodic monitoring requirements for opacity from the three boilers are based on observation of the presence or absence of visible emissions. In the event visible emissions are observed, corrective action is required. If corrective actions do not result in the absence of visible emissions, Visible Emissions Evaluations are required to demonstrate compliance with the applicable opacity limit stated above. The permittee will keep a log of observations, any corrective actions taken, and any VEE recordings.

In addition, the permittee will be required to perform stack tests on both Boiler #001 and Boiler #002 at least once during the life of this permit, but not to exceed once every 5 years, to demonstrate compliance with the PM and PM-10 emission limits.

Paper Machine (MCH2)

Inspection reports show no history of visible emissions from the paper machine. The process itself is very wet. However, to assure compliance with the visible emissions limitation, periodic monitoring is required. Periodic monitoring requirements for opacity from the paper machine is based on observation of the presence or absence of visible emissions. In the event visible emissions are observed, corrective action is required. If corrective actions do not result in the absence of visible emissions, Visible Emissions Evaluations are required to demonstrate compliance with the applicable opacity limit. The permittee will keep a log of observations, any corrective actions taken, and any VEE recordings.

LEGAL AND FACTUAL BASIS FOR DRAFT PERMIT CONDITIONS:

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.

b. Any term or condition of any preconstruction permit or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.

c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under ' 111, 112 or 129 of the federal Clean Air Act.

d. Any requirement concerning accident prevention under ' 112(r)(7) of the federal Clean Air Act.

e. Any compliance monitoring requirements established pursuant to either ' 504(b) or ' 114(a)(3) of the federal Clean Air Act or these regulations.

f. Any standard or other requirement for consumer and commercial products under ' 183(e) of the federal Clean Air Act.

g. Any standard or other requirement for tank vessels under ' 183(f) of the federal Clean Air Act.

h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.

i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.

j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1700 et seq.) of this part.

k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.

l. Any standard or other requirement governing solid waste incineration under ' 129 of the Clean Air Act.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the state but is not federally-enforceable is identified in the draft Title V permit as such.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal-operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

Comments on General Conditions

B: Permit Expiration

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by dd2.1-20.01:2 and dd10.1-1185 of the Code of Virginia, and the “Department of Environmental Quality Agency Policy Statement NO. 3-2001”.

This general conditions cites the entire Article(s) that follow:

B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

This general condition cites the sections that follow:

B.	9 VAC 5-80-80. "Application"
B.2.	9 VAC 5-80-150. "Action on Permit Applications"
B.3.	9 VAC 5-80-80. "Application"
B.4.	9 VAC 5-80-80. "Application"
B.4.	9 VAC 5-80-140. "Permit shield"
B.5.	9 VAC 5-80-80. "Application"

REQUEST FOR VARIANCES OR ALTERNATIVES:

None

COMMENT PERIOD:

The public notice appeared in the Lynchburg News & Advance on August 2, 2002.
Beginning Date: August 2, 2002
Ending Date: September 1, 2002

All written comments should be addressed to the following individual and office:

Matthew D. Biesterveld, P. E.
Environmental Engineer
Department of Environmental Quality
South Central Regional Office
7705 Timberlake Road
Lynchburg, VA 24502
Phone: (434) 582-5120 Fax: (434) 582-5125

PROCEDURE FOR REQUESTING PUBLIC HEARING:

During the public comment period any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for a public hearing shall be in writing to the above address and shall state the nature of the issues proposed to be raised in the hearing. The Director shall grant such a request for a hearing if he concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.